EES

ENVIRONMENTAL ENGINEERING SOLUTIONS, P.C.

CONSULTING ENGINEERS
1106 Main St., Peekskill NY 10566
Tel: (914) 788 - 4165 • Fax: (914) 788 - 7121 • E-mail: kasi@eespc.com • Website: www.eespc.com

August 24, 2015

Samuel Lieblich, P.E.
Regional Air Pollution Control Engineer
NYSDEC - Region 2
47-40 21st Street, One Hunters Point Plaza
Long Island City, NY 11101-5407

Re:
- **New York Presbyterian Hospital (NYPH), 168th Street; DEC ID: 2-6201-00005/00007 Ren 2**
- Semi-Annual Compliance Report (03/01/15 – 08/01/15)

Dear Mr. Lieblich:

This is in reference to the compliance reports required for the above-referenced facility. Enclosed please find the report as required by the permit, prepared based on the information provided by the facility.

Should you have any questions on this submittal, please feel free to call us at (914) 788 4165. Thank you.

Very truly yours,

ENVIRONMENTAL ENGINEERING SOLUTIONS, P.C.

Rama Robbi, Environmental Engineer

Cc:
1. The NYSDEC - Bureau of Quality Assurance, Albany
2. Mr. Karl Mangels - The USEPA Region 2, Air Compliance Branch
3. Mr. Joseph Castellano, Site Director CHONY, NYPH (ltr only)
4. Mr. Patrick Hynes, Plant Manager, NYPH (ltr only)
5. Mr. Rawlins Callender, Plant Engineer, NYPH

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Title V Permit

SEMI-ANNUAL COMPLIANCE REPORT

SUBMITTED TO NYSDEC REGION 2
(REPORTING PERIOD: March 01, 2015 – August 01, 2015)

FOR

NEW YORK PRESBYTERIAN HOSPITAL

622 W 168th STREET
NEW YORK, NY 10032-3702

DEC ID: 2-6201-00005/00007
Ren 2 Mod 0

August 30, 2015

Prepared by

EES

ENVIRONMENTAL ENGINEERING SOLUTIONS, P.C.
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1106 MAIN STREET, PEEKSKILL, NY 10566
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CERTIFICATION OF TRUTH, ACCURACY AND COMPLETENESS

Report Type: SEMI ANNUAL COMPLIANCE REPORT Reporting Period: 03/01/2015 to: 08/01/2015

DEC ID: 2-6201-00005/00007 Ren 2 Mod 0

Facility Name: NEW YORK PRESBYTERIAN HOSPITAL

Address: 622 WEST 168TH STREET, NEW YORK, NY 10032

FACILITY CONTACTS:

Name: MR. JOSEPH CASTELLANO

Title: SITE DIRECTOR/NYP-CHONY

Telephone: 212-305-5606

RESPONSIBLE OFFICIAL:

Name: MR. JOSEPH CASTELLANO

Title: SITE DIRECTOR/NYP-CHONY

Address: 177 FORT WASHINGTON AVENUE, NEW YORK, NY 10032

Telephone: 212-305-5606

The Responsible Official must sign this statement after the applicable report form is completed.

I certify, under penalty of law, that based on information and belief formed after reasonable inquiry, the statements and information contained in these documents are true, accurate and complete.

Signature of Responsible Official:

Date: 8/17/15

SEMI-ANNUAL MONITORING REPORT

30-Days & 60-Days Due Conditions Are Included In This Report

Condition Number(s)	Applicable Requirement	Permit Level	Description of Requirement	Description of Monitoring Data and Analysis Required by Permit	Deviations? Y/N	Separate Report? Date
5	6 NYCRR 201-6.4 (c) (3) (ii)	Facility	Recordkeeping and maintenance procedures	The facility submits semi-annual compliance reports on time	N	N
28	6 NYCRR 225-1.2 (b)	Facility	Residual fuel oil sulfur content must be < 0.3 wt. %	Sulfur content is below 0.3 wt.% for residual oil	N	N
29	6 NYCRR 225-1.2 (f)	Facility	Sulfur certificate must be obtained per delivery	Sulfur reports are obtained per delivery	N	N
30	6 NYCRR 225-1.2 (g)	Facility	Sulfur certificate must be obtained per delivery	Sulfur reports are obtained per delivery	N	N
31	6 NYCRR 225-1.2 (h)	Facility	Sulfur certificate must be obtained per delivery	Sulfur reports are obtained per delivery	N	N
32	6 NYCRR 225.1 (a) (3)	Facility	Residual fuel oil sulfur content must be < 0.3 wt. %	Sulfur content is below 0.3 wt.% for residual oil	N	N
33	6 NYCRR 227-1.3 (a)	Facility	Daily visual opacity must be recorded. Opacity must be below 20%	Facility operates a continuous opacity monitor in the common stack for all four boilers. Opacity is below 20%.	N	N
34	40CFR 60.13(c), NSPS Subpart A	Facility	Recordkeeping and maintenance procedures	Facility operates COMS, performs quarterly audit and maintenance as per PS 1 requirements	N	N

Condition Number(s)	Applicable Requirement	Permit Level	Description of Requirement	Description of Monitoring Data and Analysis Required by Permit	Deviations? Y/N	Separate Report? Date
39	40CFR 63.6603(a), Subpart ZZZZ	Facility	Recordkeeping and maintenance procedures	The facility submits semi-annual compliance reports on time	N	N
40	40CFR 63.6625(e), Subpart ZZZZ	Facility	Recordkeeping and maintenance procedures	The facility submits semi-annual compliance reports on time	N	N
41,42,43	40CFR 63.6640(f), Subpart ZZZZ	Facility	Recordkeeping and maintenance procedures	The facility submits semi-annual compliance reports on time	N	N
44	40CFR 63.6665, Subpart ZZZZ	Facility	Recordkeeping and maintenance procedures	The facility submits semi-annual compliance reports on time	N	N
45	40CFR 80.510(b), Subpart I	Facility	Continuous emissions monitoring, reports to be postmarked by the 30th day following the end of the semiannual period	Facility submits reports on time	N	N
52,132	40CFR 60.7(c), NSPS Subpart A	U-00001 EP-00001 P-001 P-002	Submit excess emissions report for continuous monitoring pollutants	Facility submits excess emissions reports, if any	N	N
55, 58, 61, 97, 134, 136, 138, 188	6 NYCRR 227-2.6(c)	U-00001 EP-00001 S 00004 S 00005 S 00008 S 00009 P-001 P-002	Compliance Certification – Intermittent Emission Testing. The facility should conduct test to show NOx emissions < 0.3 lb/MMBTU	No. 6 oil is no longer used by the facility. Facility has converted to No. 2 oil for the boiler operations. Gas remains to be the primary fuel. Testing on Boilers #1 and #2 were done and report submitted to DEC, test report was accepted. Testing on Boilers #3 and #4 were also done and report submitted to DEC, test	N	N

Condition Number(s)	Applicable Requirement	Permit Level	Description of Requirement	Description of Monitoring Data and Analysis Required by Permit	Deviations? Y/N	Separate Report? Date
				report was accepted. The facility conducted stack test to show NOx emissions < 0.15 lb/MMBTU		
78,114,162,212	40CFR 60.44b(a)(1), NSPS Subpart Db	U-00001 EP-00001 S00008 S0009 P-001 P-002	Continuous NOx emissions monitoring, limit: 0.3 lbs/MMBtu	NOx CEMS has been installed, a test certification report was submitted to DEC.	N	N
81,117,166,216	40CFR 60.44b(j), NSPS Subpart Db	U-00001 EP-00001 S00008 S0009 P-001 P-002	Nitrogen content should be below 0.3% by weight for both natural gas and residual oil, and combined annual capacity factor of 10% or less	Fuel oil Nitrogen content is below 0.3 wt %	N	N
82,118,167,217	40CFR 60.44b(k), NSPS Subpart Db	U-00001 EP-00001 S00008 S0009 P-001 P002	If the facility is in compliance with 40 CFR 60.44b(j), these permit conditions are not applicable	This condition is not applicable to this unit. The heat input capacity is 250 MMBtu/hr	N	N
88,124,176,226	40CFR 60.49b(a), NSPS Subpart Db	U-00001 EP-00001 S00008 S0009 P-001 P-002	Notification that emerging technology will be used to control SO_2 emissions.	Facility will use the technology. Currently the facility uses ultra low sulfur fuel oil with sulfur content no higher than 15ppm. Also, the facility uses gas as primary fuel which has substantially low sulfur content	N	N

Condition Number(s)	Applicable Requirement	Permit Level	Description of Requirement	Description of Monitoring Data and Analysis Required by Permit	Deviations? Y/N	Separate Report? Date
89,177, 227, 228, 125	40CFR 60.49b(b), NSPS Subpart Db	U-00001 EP-00001 S00008 S0009 P-001 P-002	Initial performance test for the NOx CEMS system must be performed and report submitted to agency	Facility had performed the initial test and report was submitted. Subsequently, the facility had been performing quarterly audits and annual RATAs. All reports are submitted within the quarter of performing the testing	N	N
90	40CFR 60.49b(g), NSPS Subpart Db	U-00001 EP-00001 S00008 P-001	Daily monitoring of SO_2, PM and NOx emissions, excess emissions, recordkeeping, calibration and full maintenance of CEMS system	NOx CEMS has been installed, a test certification report was submitted to DEC.	N	N
91,126, 127,181,231	40CFR 60.49b(b), NSPS Subpart Db	U-00001 EP-00001 S00008 S0009 P-001 P-002	Daily monitoring of NOx emissions, excess emissions, recordkeeping, calibration and full maintenance of CEMS system	NOx CEMS has been installed, a test certification report was submitted to DEC.	N	N
92,128,182,232	40CFR 60.49b(h), NSPS Subpart Db	U-00001 EP-00001 S00008 S0009 P-001 P-002	Excess emissions reporting	Facility submits quarterly reports including excess emissions. There were a few instances of opacity exceedance. NOx CEMS has been installed, a test certification report was submitted to DEC.	N	N

Condition Number(s)	Applicable Requirement	Permit Level	Description of Requirement	Description of Monitoring Data and Analysis Required by Permit	Deviations? Y/N	Separate Report? Date
93,129,183,233	40CFR 60.49b(i), NSPS Subpart Db	U-00001 EP-00001 S00008 S0009 P-001 P-002	Continuous emissions monitoring, reports to be postmarked by the 30th day following the end of the semiannual period	Facility submits reports on time	N	N
131	6 NYCRR 227.2 (b) (1)	U-00001 EP-00001 P-002	The two hour average emission of particulates shall not exceed 0.10 pounds per million Btu of heat input	No. 6 oil is no longer used by the facility. Facility has converted to No. 2 oil for the boiler operations. Gas remains to be the primary fuel. Testing on Boilers #1 and #2 were done and report submitted to DEC, test report was accepted. Testing on Boilers #3 and #4 were also done and report submitted to DEC, test report was accepted. The facility conducted the stack test to show NOx emissions < 0.15 lb/MMBTU	N	N
158,208	40CFR 60.42b(j)(2), NSPS Subpart Db	U-00001 EP-00001 S00008 S0009 P-002	The maximum sulfur content in Number 6 oil shall not exceed 0.3 wt. %	No. 6 oil is no longer used by the facility. Facility has converted to No. 2 oil for the boiler operations. Gas remains to be the primary fuel. The sulfur content of No. 2 oil is 15 ppm.	N	N
159, 178, 209	40CFR 60.43b(b), NSPS Subpart Db	U-00001 EP-00001 S00008	Particulate matter shall not exceed 0.10 lbs/million BTU heat input.	Facility will perform test within the permit term to show compliance with the 0.1 lbs/MMBtu particulate emissions	N	N

Condition Number(s)	Applicable Requirement	Permit Level	Description of Requirement	Description of Monitoring Data and Analysis Required by Permit	Deviations? Y/N	Separate Report? Date
		S00009 P-002		limit		
160,210	40CFR 60.43b(f), NSPS Subpart Db	U-00001 EP-00001 S00008 S0009 P-002	Continuous opacity measurement, should not exceed 27 percent.	A COMS is in place and working. Opacity is below 20% except for few exceedances	N	N
172,222	40CFR 60.47b(f), NSPS Subpart Db	U-00001 EP-00001 S00008 S0009 P-002	Shall not combust fuel oil with sulfur content in excess of 0.3 wt. % to be in compliance sulfur dioxide emissions	No. 6 oil is no longer used by the facility. Facility has converted to No. 2 oil for the boiler operations. Gas remains to be the primary fuel. The sulfur content of No. 2 oil is 15 ppm.	N	N
180,230	40CFR 60.49b(f), NSPS Subpart Db	U-00001 EP-00001 S00008 S0009 P-002	Continuous opacity monitoring must be on	Facility has a COMS monitor in place	N	N
184,234	40CFR 60.49b(j), NSPS Subpart Db	U-00001 EP-00001 S00008 S0009 P-002	Reports must be submitted within 30 days of the reporting period	Reports are submitted on time	N	N
186,236	40CFR 60.49b(r), NSPS Subpart Db	U-00001 EP-00001 S00008 S0009 P-002	Sulfur certificate must be obtained per delivery	Sulfur reports are obtained per delivery	N	N

60-Day Due Conditions:

Condition Number(s)	Applicable Requirement	Permit Level	Description of Requirement	Description of Monitoring Data and Analysis Required by Permit	Deviations ? Y/N	Separate Report? Date
53,56,59,95 ,133,135, 137,187	6 NYCRR 227-2.4 (b) (1) (i)	U-00001 EP00001 ES00004 ES00005 ES00008 ES0009 P001 P002	The facility should conduct stack test once during the term of the permit to show that NOx emissions are below 0.3 lb/MMBTU during oil firing. The owner or operator shall submit a testing protocols to the department of approval a minimum 30days prior to stack testing.	The hospital had converted from No. 6 oil to No. 2 oil. In this process, ES00008 and ES00009 were completely converted and tested for NOx in August 2013 per approved protocol. Test results were submitted to DEC. ES00004 and E00005 were also completely converted and tested for NOx. Testing for these two boilers (ES00004 and ES00005) were completed and test results were submitted to DEC.	N	N
54,57,60,96 ,237,238,23 9,240	6 NYCRR 227-2.4 (b) (1) (ii)	U-00001 EP00001 ES00004 ES00005 ES00008 ES0009 P001 P003	The facility should conduct stack test once during the term of the permit to show that NOx emissions are below 0.15 lb/MMBTU during oil firing.	The hospital has converted from No. 6 oil to No. 2 oil. In this process, ES00008 and ES00009 were completely converted and tested for NOx in August 2013 per approved protocol. Test results were submitted to DEC. ES00004 and E00005 were also completely converted and tested for NOx. Testing for these two boilers (ES00004 and ES00005) were completed and test results were submitted to DEC.	N	N
58, 61, 97, 134, 136, 138, 188	6 NYCRR 227-2.6 (c)	U-00001 EP-00001 S 00004 S 00005 S 00008 S 00009 P-001 P-002	Compliance Certification – Intermittent Emission Testing. The facility should conduct test to show NOx emissions < 0.3 lb/MMBTU	No. 6 oil is no longer used by the facility. Facility has converted to No. 2 oil for the boiler operations. Gas remains to be the primary fuel. Testing on Boilers #1 and #2 were done and report submitted to DEC, test report was accepted.	N	N

				Testing on Boilers #3 and #4 were also done and report submitted to DEC, test report was accepted. The facility will conduct stack test to show NOx emissions < 0.15 lb/MMBTU		

SUMMARY OF DEVIATIONS FROM PERMIT REQUIREMENTS

Condition Number(s)	Applicable Requirement	Permit Level	Description of Deviation	Probable Cause of Deviation	Corrective/Preventative Action Taken as a Result of the Deviation	Date of Written Notification
NONE	NONE	NONE	NONE	NONE	NONE	NONE

EES

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CONSULTING ENGINEERS
1106 Main St., Peekskill NY 10566
Tel: (914) 788 - 4165 • Fax: (914) 788 - 7121 • E-mail: kasi@eespc.com • Website: www.eespc.com

August 24, 2015

Samuel T. Lieblich, P.E.
Regional Air Pollution Control Engineer
NYSDEC - Region 2
47-40 21st Street, One Hunters Point Plaza
Long Island City, NY 11101-5407

Re:
- **NYC-DOC – Riker's Island, E Elmhurst, NY**
- **DEC ID 2-6007-00259/00033 Ren 2**
- Title V Permit Ren 2- Quarterly Compliance Report (04/01/15 – 06/30/15)
- 2nd Quarter COMS Audit Report

Dear Mr. Lieblich:

This is in reference to the compliance report required as per Title V Ren 2 permit issued to the above referenced facility.

Based on the data provided by Riker's Island facility, we prepared the compliance documentation.

Should you have any questions on this submittal, please feel free to call us at (914) 788 4165. Thank you.

Very truly yours,

ENVIRONMENTAL ENGINEERING SOLUTIONS, P.C.

Rama Robbi, Environmental Engineer

CC.
1. The NYSDEC - Bureau of Quality Assurance, Albany
2. Chief - The USEPA Region 2, Air Compliance Branch
3. Mr. Curtis Pierre, Senior Stationary Engineer, NYCDOC – Riker's Island
4. Mr. Vincent Perillo, Asst. Deputy Warden, Support Services Division, NYCDOC

Encl: Compliance Report, Audit Report

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TITLE V

QUARTERLY COMPLIANCE REPORT

SUBMITTED TO NYSDEC REGION 2
(REPORTING PERIOD: April 01, 2015 – June 30, 2015)

FOR

NYC – DOC – Rikers Island

17-25 Hazen Street
East Elmhurst, NY 11370

DEC ID: 2-6007-00259/00033
REN 2

August 10, 2015

Prepared by

EES
ENVIRONMENTAL ENGINEERING SOLUTIONS, P.C.
CONSULTING ENGINEERS
1106 MAIN STREET, PEEKSKILL, NY 10566
Tel: (914) 788-4165 Fax: (914) 788-7121 www.eespc.com

CERTIFICATION OF TRUTH, ACCURACY AND COMPLETENESS

Report Type: QUARTERLY COMPLIANCE REPORT Reporting Period: 04/01/2015 to: 06/30/2015

DEC ID: 2-6007-00259/00033 Ren 2

Facility Name: NYC-DOC-RIKER'S ISLAND

Address: 17-25 HAZEN STREET, EAST ELMHURST, NY 11370

FACILITY CONTACT:

Name: MR. CURTIS PIERRE

Title: SENIOR STATIONARY ENGINEER

Telephone: 718-546-1488

RESPONSIBLE OFFICIAL:

Name: MR. VINCENT PERILLO

Title: ASSISTANT DEPUTY WARDEN, SUPPORT SERVICES DIVISION

Address: 13-11 HAZEN STREET, EAST ELMHURST, NY 11370

Telephone: 718-546-1429

The Responsible Official must sign this statement after the applicable report form is completed.

I certify, under penalty of law, that based on information and belief formed after reasonable inquiry, the statements and information contained in these documents are true, accurate and complete.

Signature of Responsible Official:

Date: 8/21/15

QUARTERLY MONITORING REPORT

Condition Number(s)	Applicable Requirement	Permit Level	Description of Requirement	Description of Monitoring Data and Analysis Required by Permit	Deviations? Y/N	Separate Report Date?
50	6 NYCRR 227-1.4(b)	U-00001 EP U0001	Submit quarterly COMS excess emission reports, continuous emission monitoring, opacity should be below 20%	COMS is operational, opacity was below 20% during this quarter. No excess emissions observed during this reporting period.	N	N

SUMMARY OF DEVIATIONS FROM PERMIT REQUIREMENTS

Condition Number(s)	Applicable Requirement	Permit Level	Description of Deviation	Probable Cause of Deviation	Corrective/Preventative Action Taken as a Result of the Deviation	Date of Written Notificati
None	None	None	None	None	None	None

Rikers Island Prision
COMS Audit

2nd Quarter 2015

Test Date: June 10, 2015

Performed by: Environmental Monitor Service, Inc.

Location: Rikers Island 1725 Hazen St. East Elmhurst NY. 11370

Introduction

The facility operates a Model 1304 Continuous Opacity Monitoring System (COMS) on their Boilers Stack outlet. This COM determines opacity exiting the stack and in accordance with the facilities permits audited on a quarterly basis.

All calibration error test auditing procedures, data collection, and calculations were performed according to specifications listed in Title 40 (effective date of April, 2001) of the Code of Federal Regulations (CFR), Part 60, Appendix B, Performance Specification 1 for Opacity Monitors, section 8.3 (ii) Calibration Error Check, and the Environmental Protection Agency's Technical Assistance Document: Performance Audit Procedures For Opacity Monitors (EPA - 450/4-92-010).

After a full inspection of the system an on-line test reflector was attached to the COM and the adjustable iris of the audit device was adjusted until a true zero reading was obtained. A certified and National Institute of Standards and Technology (NIST) traceable low value neutral density filter (NDF) was inserted into the audit device and remained there until a valid reading was obtained. This procedure was then repeated for a mid-range NDF, and a high-range NDF. Each filter was inserted into the light path five times each for a total of fifteen runs in non-consecutive order.

A six-minute average test was performed by inserting each of 3 filters into the light path and remained there for thirteen minutes to ensure a full six minutes of data was collected for each filter.

During the test, the readings of the COM were recorded from the service module digital display and compared to the recorder normally used by the facility for recording and reporting purposes. The method compared NDF value to those recorded by the COM. From these values, the arithmetic difference, arithmetic mean, confidence coefficient, and calibration error were determined.

Environmental Monitor Service was responsible for all phases of the audit including, scheduling, testing, collection/ verification of facility and COM operational data, data reduction, and report generation.

General Facility Description

Unit(s) Identification

North Stack- Per DEC requirements, the Rikers Island facility operates a Model 1304 Continuous Opacity Monitoring System (COMS) with the flue gases from four gas/oil fired boilers (4 Keeler boilers) being vented from a single smokestack.

Special Notes

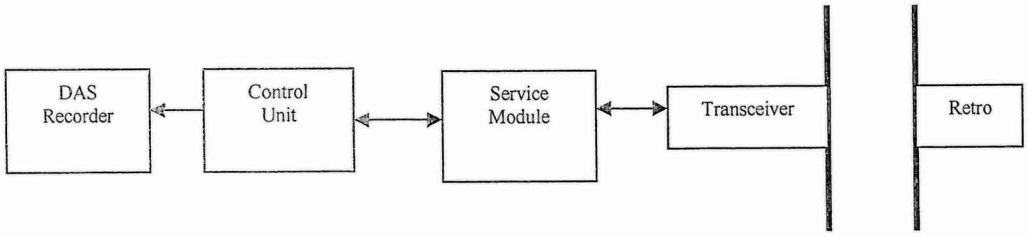
- Dimensions of the stack exit I .D. and monitor's path length were supplied from Able Co. on April 16,2004
-
- System's recorder records 1min. and 6 min. average.

Test Location

All testing took place at the monitor's sensor and control unit location where the monitor performs its normal operations. No off-stack testing took place.

Continuous Opacity Monitoring System

The COMS at the facility are EMS 1304 Continuous Opacity Monitors. The COMS consists of a remote control unit, recorder for archival information, stack mounted double-pass transceiver, service module and retro-reflector. An air purge system is utilized to protect the optics from dirt.



COM AUDIT DATA SUMMARY

FACILITY: Rikers Island Prision
UNIT: North Stack
AUDIT DATE: June 10, 2015
AUDITOR: Bart Gianotti

PARAMETER		LINE NO.	AUDIT RESULT	SPEC
FRONT PANEL		8	OFF	OFF
INTERNAL ZERO ERROR	PANEL METER	9	0.60	4%+-
	DATA RECORDER	10	0.58	4%+-
INTERNAL SPAN ERROR	PANEL METER	11	1.30	4%+-
	DATA RECORDER	12	1.32	4%+-
MONITOR ALIGNMENT ANALYSIS		17	YES	CENTERED
OPTICAL SURFACE DUST ACCUMULATION				
RETROREFLECTOR		13 & 14	1.50	
TRANSCEIVER		15 & 16	0.60	
TOTAL			2.10	
CALIBRATION ERROR ANALYSIS				
MEAN ERROR				
LOW			-0.09	
			0.00	
MID			-0.85	
			-0.85	
HIGH			-0.52	
			-0.49	
CONFIDENCE INTERVAL				
LOW			0.02	
MID			0.02	
HIGH			0.01	
CALIBRATION ERROR				
LOW			0.11	<=3%
MID			0.87	<=3%
HIGH			0.53	<=3%
AVERAGER ERROR				
LOW			0.00	<=3%
MID			-0.85	<=3%
HIGH			-0.49	<=3%

Environmental Monitor Service, Inc.
PO Box 4340, Yalesville, CT 06492
Ph. 203.935.0102, Fax 203.634.6663

OPACITY AUDIT DATABASE ENTRY SHEET

GENERAL INFORMATION

ITEM	INFORMATION	DATA
A	Source Identification/Facility	Rikers Island Prision
B	Auditing Quarter	2nd Quarter 2015
C	Audit Date	June 10, 2015
D	Audit Starting Time	9:30 AM
E	Audit Ending Time	11:30 AM
F	Unit/Stack I.D.	North Stack
G	Auditor	Bart Gianotti
H	Company	EMS
I	Attendee	
J	Facility Contact Person	Curtis Pierre
K	EPA Contact Person	NA
L	Analyzer Manufacturer	EMS
M	Model Number	1304
N	Serial Number	279
O	Data Recorder (strip chart, DAS, etc.)	DAS

PRELIMINARY DATA

LINE #	INFORMATION	DATA
1	Stack Exit I.D. (inches) =Lx	140.00
2	Monitor Pathlength (inches I.D.x2) =Lt	308.00
3	Calculated OPLR =Lx/Lt	0.45
4	Source Cited OPLR	0.45
5	Source Cited Zero Auto Cal Value (%)	1.20
6	Source Cited Span Auto Cal Value (%)	24.40

FAULT LAMP CHECKS

8	Fault Diagnostics (on/off)	OFF

ZERO CHECK

9	Panel Meter Zero Cal Value (%)	1.80
10	Opacity Data Recorder Zero Value (%)	1.78

SPAN CHECK

11	Panel Meter Span Cal Value (%)	25.70
12	Opacity Data Recorder Span Cal Value (%)	25.72

RETROREFLECTOR DUST ACCUMULATION CHECK

13	Pre-cleaning Effluent Opacity (%)	5.60
14	Post-cleaning Effluent Opacity (%)	4.10

TRANSCEIVER DUST ACCUMULATION CHECK

15	Pre-cleaning Effluent Opacity (%)	4.10
16	Post-cleaning Effluent Opacity (%)	3.50

OPTICAL ALIGNMENT CHECK

17	Image Centered? (yes/no)	YES

CALIBRATION ERROR CHECK

		NA

FILTER INFORMATION

	Neutral Density Filter Serial Number	% Opacity
18	F710	18.54
19	1134	24.77
20	1095	48.28

FINAL CALIBRATION ERROR DATA

21	Beginning Zero Value (%)	0.16
22	Low Reading (%)	16.87
23	Mid Reading (%)	21.90
24	High Reading (%)	44.33
25	Ending Zero Value (%)	0.00
26	Low Reading (%)	16.89
27	Mid Reading (%)	21.86
28	High Reading (%)	44.33
29	Ending Zero Value (%)	0.11
30	Low Reading (%)	16.90
31	Mid Reading (%)	21.86
32	High Reading (%)	44.31
33	Ending Zero Value (%)	0.10
34	Low Reading (%)	16.89
35	Mid Reading (%)	21.87
36	High Reading (%)	44.33
37	Ending Zero Value (%)	0.11
38	Low Reading (%)	16.91
39	Mid Reading (%)	21.87
40	High Reading (%)	44.32
41	Ending Zero Value (%)	0.11
42	Beginning 6-minute Avg. Zero Value (%)	0.11
43	6-minute Average Low Reading (%)	16.94
44	6-minute Average Mid Reading (%)	21.83
45	6-minute Average High Reading (%)	44.33
46	Ending 6-minute Avg. Zero Value (%)	0.00

Environmental Monitor Service, Inc.
PO Box 4345, Wallingford, CT 06492
Ph. 203.935.0162 Fax 203.634.6663

CALIBRATION ERROR TEST DATA

Facility: Rikers Island Prision

Contact Person: Curtis Pierre

Auditor: Bart Gianotti

Analyzer Manufacturer: EMS

Afilliation: EMS

Model# 1304 Serial# 279

Date: June 10, 2015

Unit/Stack I.D.: North Stack

Monitor Pathlength, L1:

308.00 inches

Emission Outlet Pathlength, L2:

140.00 inches

O.P.L.R.: 0.45

Instantaneous Calibrated Neutral Density Filter Values				
Certified NDF Value		Zero Offset	NDF Value Path & Zero Adjusted	
Low	18.54	0.16	Low	16.99
Mid	24.77	0.16	Mid	22.72
High	48.28	0.16	High	44.84

Run Number	ND Filter Value Path & Zero Adjusted	Instrument Reading Percent Opacity	Arithmetic Difference % Opacity LOW	MID	HIGH
1 - Low	16.99	16.87	-0.12		
2 - Mid	22.72	21.90		-0.82	
3 - High	44.84	44.33			-0.51
4 - Low	16.99	16.89	-0.10		
5 - Mid	22.72	21.86		-0.86	
6 - High	44.84	44.33			-0.51
7 - Low	16.99	16.90	-0.09		
8 - Mid	22.72	21.86		-0.86	
9 - High	44.84	44.31			-0.53
10 - Low	16.99	16.89	-0.10		
11 - Mid	22.72	21.87		-0.85	
12 - High	44.84	44.33			-0.51
13 - Low	16.99	16.91	-0.08		
14 - Mid	22.72	21.87		-0.85	
15 - High	44.84	44.32			-0.52
		Arithmetic Mean	-0.09	-0.85	-0.52
		CC	0.02	0.02	0.01
		Calibration Error	0.11	0.87	0.53

Average Calibrated Neutral Density Filter Values				
Certified NDF Value		Zero Offset	NDF Value Path & Zero Adjusted	
Low	18.54	0.11	Low	16.94
Mid	24.77	0.11	Mid	22.68
High	48.28	0.11	High	44.82

6-Minute Test For	ND Filter Value Path & Zero Adjusted	Instrument Reading Percent Opacity	Arithmetic Difference % Opacity LOW	MID	HIGH
Low	16.94	16.94	0.00		
Mid	22.68	21.83		-0.85	
High	44.82	44.33			-0.49

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CALIBRATION ERROR TEST CALCULATIONS

Analyzer Manufacturer:		EMS	
Model:	1304	Serial#:	279
Date:	June 10, 2015		

data	measured	diff		
1	16.87	-0.115	xi 2	0.0133
2	16.89	-0.095	xi 2	0.0091
3	16.9	-0.085	xi 2	0.0073
4	16.89	-0.095	xi 2	0.0091
5	16.91	-0.075	xi 2	0.0057
sum		-0.47		0.04

Mean	-0.0934
CC	0.0184
ER	0.1118
Actual Low	16.99
Sd	0.0148

data	measured	diff		
1	21.9	-0.8219	xi 2	0.67549
2	21.86	-0.8619	xi 2	0.74284
3	21.86	-0.8619	xi 2	0.74284
4	21.87	-0.8519	xi 2	0.72571
5	21.87	-0.8519	xi 2	0.72571
sum		-4.25		3.61

Mean	-0.8499
CC	0.0204
ER	0.8703
Actual Mid	22.72
Sd	0.0164

data	measured	diff		
1	44.33	-0.5134	xi 2	0.2636
2	44.33	-0.5134	xi 2	0.2636
3	44.31	-0.5334	xi 2	0.2845
4	44.33	-0.5134	xi 2	0.2636
5	44.32	-0.5234	xi 2	0.274
sum		-2.60		1.35

Mean	-0.5194
CC	0.0111
ER	0.5305
Actual High	44.84
Sd	0.0089

* Calculations performed on EXCEL spreadsheets per 40 CFR 60, Appx. B, PS1, and EPA 450-4-92-010 formulas

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